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ABSTRACT

The problem was to determine similarities and differences in attitudes toward the meaning of the term "outdoor education." The examined population comprised members of the American Association for Health, Physical Education, and Recreation's (AAHPER) Council on Oftdoor Education and Camping who were associated with colleges and universities. Results were significant. Of the 118 in the population, 97% responded by completing the test instrument. Results indicated that the AAHPER Council was divided into 3 partially overlapping interest groups, each having some individual and some shared attitudes toward the meaning of "outdoor education." The research hypothesis was that agreement existed among members of the AAHPER Council on the meaning of "outdoor education." "Agreement" was operationally defined as at least 70% of the respondents appearing on any one of the attitude factors abstracted by a factor analytic computer program (Q-methodology). Since 70% of the respondents did not appear on any one of the factors, the hypothesis was rejected. Since areas of disagreement appeared, it was within the scope of inquiry to describe the nature of this disagreement. An analysis and interpretation of the extracted factors and an explanation of the concomitant attitude groups described the areas of this disagreement. The 3 prominent attitude groups were the (1) Environment-oriented Group, (2) Conservation-oriented Group, and (3) Outdoor-activity-oriented Group. (Author/LS)

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A FACTOR ANALYSIS OF ATTITUDES TOWARD THE TERM "OUTDOOR EDUCATION" AS GIVEN BY THE MEMBERS OF THE AAHPER COUNCIL ON OUTDOOR EDUCATION AND CAMPING

by

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1970

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ABSTRACT[1]

The problem was to determine similarities and differences in attitudes toward the meaning of the term "outdoor education." The examined population comprised the members of the American Association of Health, Physical Education, and Recreation's Council on Outdoor Education and Camping who were in college and universities. This was the first study that attempted to clarify the various schools of thought toward the meaning of "outdoor education."

The results were significant. Ninety-seven percent (114 of a possible 118) of the respondents completed the test instrument. The results indicated that the AAHPER Council was divided into three partially overlapping interest groups, each group having some individual and some shared attitudes toward the meaning of "outdoor education." It is the opinion of this researcher that these groups should be defined, their interests determined, and their individual and shared objectives established.

The research hypothesis was that agreement existed among the members of the AAHPER Council on the meaning of "outdoor education." "Agreement" was operationally defined as at least 70 percent of the respondents appearing on any one of the attitude factors abstracted by a factor analytic computer program (Q-methodology). Since 70 percent of the respondents did not appear on any one of the factors, the hypothesis was rejected. Since areas of disagreement appeared, it was within the scope of the inquiry to describe the nature of this disagreement. An analysis and interpretation of the extracted factors and an explanation of the concomitant attitude groups described the areas of this disaggreement. The three prominent attitude groups were the following:

I. "Environment-Oriented Group": The members of this group were primarily media-oriented; that is, they tended to view the use of the outdoors as a learning medium, as a vehicle of communication. At the same time, however, they did not want to exclude activities related to conservation education. This group coalesced those who were apparently interested in the instructional implications of outdoor education and regarded the outdoors as an educational tool.

II. "Conservation-Oriented Group": The members of this group were

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[1] Journal of Outdoor Education, Vol. 4, No. 1 (Fall, 1969) pp. 15-16.

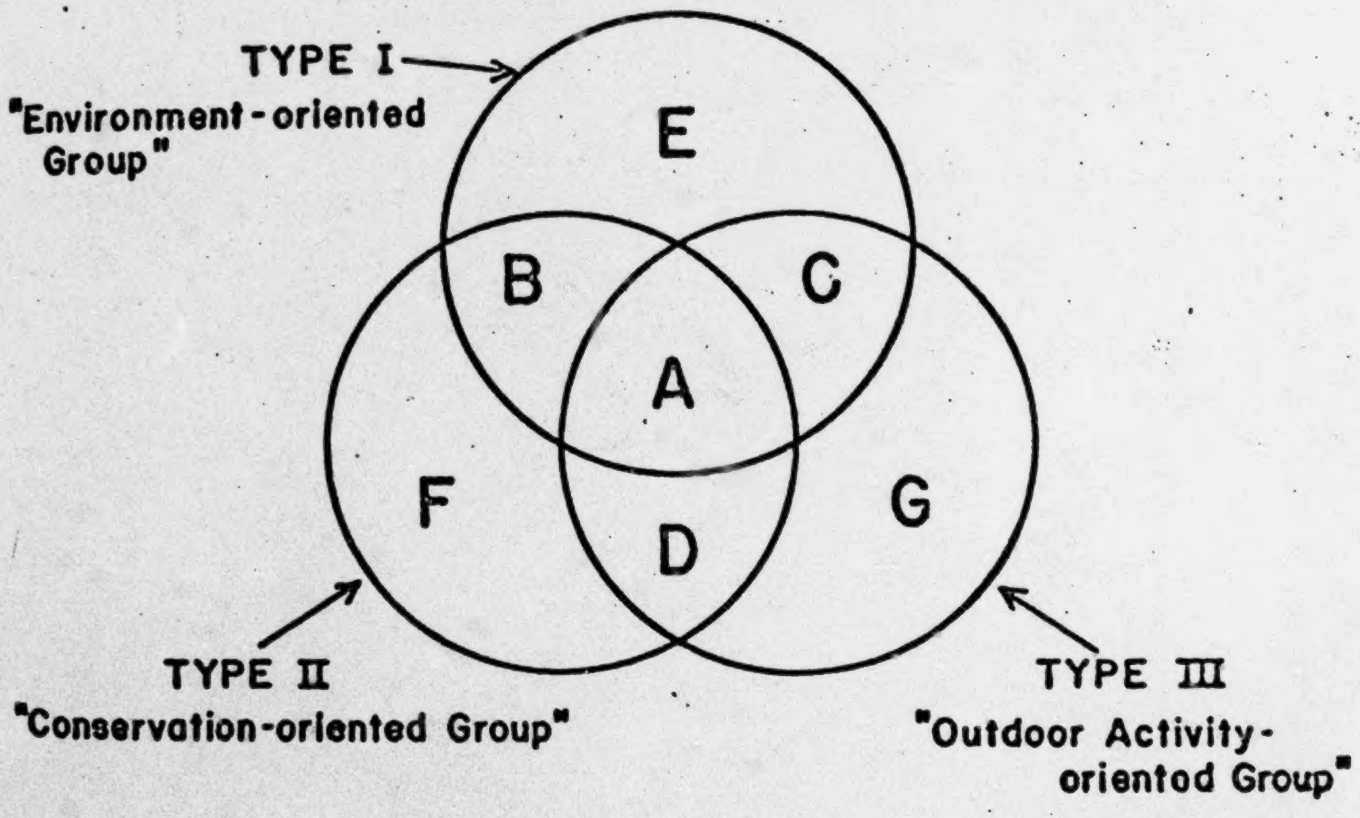
generally conservation-oriented; that is, they felt that "outdoor education" encompassed those activities that focus upon conservational ends. The group coalesced those who had partial interests in groups I and III, but who clustered into a discernibly different group with predominantly wildlife, natural science, and conservation education interests.

III. "Outdoor Activity-Oriented Group": This group was oriented toward the physical location of where an activity is conducted and felt that an interaction with a natural environment was not a necessary condition of "outdoor education." This was the most distinctive group. They were mainly physical-education and recreation-education oriented and were primarily interested in activities conducted in an outdoor setting and education for outdoor recreation.

For clarification, the commonalities and disparities of the three attitude types or interest groups may be demonstrated with the accompanying Venn diagram (See page **iv.**). Three overlapping groups or types (I, II, and III) were defined. Diagram area "A" illustrates the commonalities of all three groups whereas areas "B", "C", and "D" indicate attitudes shared by an adjoining set. Each set also had distinctive characteristics, represented by areas "E", "F", and "G."

Diagram area "A" represents the criterion of "outdoors" and all of its varied connotations, such as the use of the outdoors as a vehicle of communication, the use of the outdoors as the content of communication, and the use of the outdoors as a location for something to happen but not intrinsically dependent upon that location for the happening. The three types were almost of equal size, each comprising about the same number of the respondents. The attitude groups apparently were defined according to their emphasized interests which are implied in the label given to each group.

THREE TYPES OF ATTITUDES TOWARD THE MEANING OF THE TERM "OUTDOOR EDUCATION"


TYPE I
"Environment-oriented Group"
E
B
C
A
F
D
G
TYPE II
"Conservation-oriented Group"
TYPE III
"Outdoor Activity-oriented Group"

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CHAPTER 1

INTRODUCTION

The preliminaries of the research problem at hand involved a precise, accurate, and clear statement of the specific problem, the development of an amenable hypothesis, the recognition of certain delimitations and assumptions, and a statement of the significance of the problem. Additional preliminaries required a statement of intent and a clarification of pertinent terms.

Statement of the Problem

The problem under consideration was to determine whether or not there was agreement among individual members, in colleges and universities, of the American Assocation for Health, Physical Education, and Recreation's Council on Outdoor Education and Camping on the meaning of the term "outdoor education." Furthermore, it was within the scope of the problem to determine the nature of this agreement if areas of agreement were discovered. If areas of disagreement were discovered, it was likewise within the scope of the problem to discover the nature of this disagreement.

The above may be restated as follows: Is there agreement among the members of the AAHPER Council on Outdoor Education and Camping on the meaning of the term "outdoor education?" If so, what are the areas of agreement? If there are areas of disagreement, then what are they?

Hypothesis

There is agreement among the members of the AAHPER Council on Outdoor Education and Camping on the meaning of the term "outdoor education."

Delimitations

This writer limited the study to include only the members of the AAHPER Council on Outdoor Education and Camping who were in colleges and universities and who appeared on the Council's membership list dated June 20, 1967. It was this author's and others' belief that "the 'best' research results come from explicitly defined and rather narrowly limited problem areas."[1]

This researcher believed that the problem had the widest possible application to individuals academically associated with colleges and universities; however, any generalizations which resulted were based upon the application of a specific instrument, at a specific time, to specific individuals, but at various geographical locations.

The various aspects of outdoor education selected for inclusion in the test instrument were chosen within the purview of the writer and in consultation with two advisors.[2] The writer attempted to include all of the most widely accepted connotations and beliefs purported at that time. Since specific definitions may change over a period of time, this study would have limited validity when referred to years later. "Descriptive-survey studies are soon out of date and must be repeated."[3]

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[1] "Selecting, Defining, and Delimiting the Problem, Establishing the Hypothesis," Course Syllabus, Educational Administration and Supervision 500, Research Methods, Unit 2, Part A (Southern Illinois University, Spring, 1967), p. 1. (Mimeographed.)

[2] Dr. Thomas J. Rillo and Clifford E. Knapp.

The information gathered was limited to the respondents' reactions to certain statements as recorded between February 12 and April 8, 1968. There were no major events known to this researcher within this period of time which could have conceivably affected the respondents' reactions.

An important limitation was the conditions under which the respondents reacted to the selected statements. There was no control over these variables. This researcher believed that it was unlikely that a great many of the respondents were exposed to conditions that might have adversely influenced their reactions and hence adversely skew the data.

The study was limited in that the information was obtained from a single examination whereas two or more consecutive examinations made by identical methods would have tended to be more reliable.

Basic Assumptions

This author found it necessary to make a number of assumptions. These assumptions are usual among researchers ascertaining information with survey instruments.[4] The first assumption was that the desired data were known by the recipients of the rating scale.

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[3] Carter V. Good, Introduction to Educational Research (2d ed.; New York: Appleton-Century-Crofts, 1963), p. 80.

The second assumption was that the topic of outdoor education had been of interest to the selected respondents. This was based upon the recorded fact that each respondent was a dues-paying member of the professional organization housing the Council on Outdoor Education and Camping, and that each member personally requested that he be a member of the Council. The professional interest of the Council members would have tended to increase the reliability of the instrument.[5]

The third assumption was that the respondents had been honest in their replies. Since every rating sheet--except for one--carried the personally inscribed name, title of position, and address of the respondent, it was reasonable to assume that the responses were bona fide. Also, the respondents were apprised that their reactions would remain confidential, further creating an unthreatening atmosphere of unrestricted response.

In sum, this researcher assumed that the recipients of the rating sheet instrument had the desired information, were ready and able and willing to communicate this information, and would communicate honestly. If these conditions existed in reality, and they were assumed to exist, then the respondents would be reliable.

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[4] Ibid., pp. 248-49.

[5] Ibid., p. 248.

Significance of the Problem

A survey conducted by Dr. Lloyd L. Cockrell[6] indicated that there was a great lack of understanding as to what was meant by the term "outdoor education." He also demonstrated that there was no standard terminology existing in the area of outdoor education. There was such a variety of programs and activities carried on under the guise of outdoor education that the term had tended to defy definition. Moreover, the recent deluge of Federally funded outdoor education projects,[7] increasing the demand for university trained outdoor educators, gave the field a new impetus. This impetus created new literature and a myriad of conferences and workshops[8] designed to communicate the meaning, scope, and implications of the outdoor teaching method. It was difficult to communicate the meaning of a term that ostensibly had no specific denotation.

This writer believed that it was important for an outdoor educator to understand how others viewed his profession. Furthermore, in regard to outdoor education program implementation, it was difficult to communicate without substantial knowledge of the terms involved. It was necessary to clarify the term "outdoor education," but the field apparently failed to agree upon an adequate definition. This study attempted to establish areas of agreement among a nationally selected group of respondents who are generally considered influential in outdoor education.

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[6] Lloyd L. Cockrell, "A Survey of Outdoor Teacher Education Programs in Higher Education" (unpublished research report, Northern Illinois University, 1962), p. 11.

[7] U. S., Office of Education, Pacesetters in Innovation, Descriptions of the First Projects Approved, Title III, Elementary and Secondary Education Act of 1965, Supplementary Centers and Services Program, Office of Education No. OE-23046, February, 1966, pp. 1, 5-6, 25, 28, 57, 62, 81, 103.

[8] American Association for Health, Physical Education, and Recreation, Education in and for the Outdoors, A Report on the Second National Conference on Outdoor Education, Michigan, May 2-4, 1962 (Washington, D.C.: American Association for Health, Physical Education, and Recreation, 1963), pp. 80-81.

The problem was logically deduced from the belief that the effectiveness of any group is somewhat directly proportional to the ability of its individual members to communicate unambiguously to one another. Through knowledge of one another's, or the group's, perceptions of and attitudes toward a particular concept, communication and problem-solving abilities in relation to that concept are enhanced. It was the conviction of this researcher that the effectiveness of the AAHPER Council on Outdoor Education and Camping would be increased upon the Council members' awareness of the implications of this report. It was anticipated by this author that this report would be used accordingly.

Purpose of the Study

The purpose of this study was to determine the similarities and differences in the attitudes toward the meaning of the term "outdoor education." The information was of particular interest at the time of the study because it would not only serve as a guide for ESEA,[9]

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[9] Elementary and Secondary Education Act, P.L. 89-10, United States Congress, 1965.

Title III, program implementation but also it would help provide essential material for university curricular development.

The purpose of this applied research project was to secure evaluations admittedly not final, but presumably desirable in view of the apparent need to resolve an educational dilemma. The author desired to secure evidence concerning the existing situation. He needed quantitative information held principally by the selected respondents. Furthermore,

> if the primary task of professional educators is to improve the process of education as much as possible, as rapidly as possible, they will do well to direct their efforts . . . toward applied research designed to yield information immediately useful in the solution of contemporary educational problems.[10]

The purpose of this research was to attempt to resolve a contemporary educational problem.

Definition of Terms

Analysis: "The ordering, the breaking down of data into constituent parts in order to obtain answers to research questions."[11]

Definition: "Explanation of the meaning or meanings of a word; also, a formulation of such meaning or meanings."[12] "The process of determining the meaning or signification of a word, idea, or proposition, in general and within a given context."[13]

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[10] Robert L. Ebel, "Some Limitations of Basic Research in Education," Phi Delta Kappan, Vol. XLIX, No. 2 (October, 1967), p. 81.

[11] Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1964), p. 604.

[12] Webster's New Collegiate Dictionary (Springfield, Mass.: G. & C. Merriam Co., 1961), p. 217.

Agreement: "State or act of agreeing: harmony of opinion...; concurrence; concord; conformity."[14] Having the same rating sheet response category; operationally, having at least 70 percent of the respondents appearing on any one of the factors abstracted during the factor analysis.

AAHPER: American Association for Health, Physical Education, and Recreation, a department of the National Education Association.

AAHPER Council on Outdoor Education and Camping: This Council is attached to the General Division within the structure of AAHPER and concerns itself with activities that cut across several divisions. The purpose of the Council, as stated in the Operating Code, is "to promote the development of philosophy, policy, standards, and terminology, and the improvement of programs, materials and methods in the areas of concern of the Council."[15]

Rating Sheet: The title of the data-gathering test instrument used in, and constructed for, this research project.

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[13] Carter V. Good (ed.), Dictionary of Education (2nd ed.; New York: McGraw-Hill Book Company, Inc., 1959), p. 159.

[14] Webster's New Collegiate Dictionary, p. 19.

[15] Council on Outdoor Education and Camping, "The Council on Outdoor Education and Camping" (Washington, D.C.: American Association for Health, Physical Education, and Recreation, n.d.), 1 p. (Lithographed.)

CHAPTER II

REVIEW OF RELATED LITERATURE

The researcher began by consulting the Education Index, the Encyclopedia of Educational Research, and the Review of Educational Research for the specific topics of outdoor education, school camping, teaching methods, camping education, curriculum, science, conservation education, field study, and others. He anticipated that some recent studies existed wherein the author had defined the term "outdoor education." The search proved fruitless.

A thorough search of the Bibliography of Studies and Research in Camping and Outdoor Education[1] and its recent supplements indicated no study attempting to clarify or define outdoor education. The Bibliography of School Camping and Outdoor Education[2] revealed one article by Donaldson[3] on defining outdoor education. The article did not define outdoor education as derived from usage; it only stated a particular opinion.

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[1] American Camping Association Studies and Research Committee, Bibliography of Studies and Research in Camping and Outdoor Education (Revised, April, 1962, Martinsville, Indiana: American Camping Association).

[2] American Camping Association, Bibliography of School Camping and Outdoor Education (Martinsville, Indiana: American Camping Association, 1962), p. 5.

[3] George W. Donaldson and Louise E. Donaldson, "Outdoor Education--A Definition," Journal of the American Association for Health, Physical Education, and Recreation, Vol. XXIX (May-June, 1958), pp. 16-17, 68.

The card file on theses, dissertations, and publications related to outdoor education, which had been shared between Dr. Donald R. Hammerman of Northern Illinois University and the Outdoor Education Center at Southern Illinois University, was probably one of the most complete in the United States. An intensive search of this file showed no study with the specific purpose of defining or clarifying the meaning of outdoor education.

An examination of eight bibliographies dealing with articles related to outdoor education proved more prolific. The bibliographies were by Selverstone,[4] Rillo,[5] Hammerman,[6] the Outdoor Education Center for Southern Illinois,[7] the California Journal of Elementary Education,[8] and three were by The Outdoor Education Association, Inc.[9] Robert

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[4] Arthur W. Selverstone, "Bibliography on Outdoor Education," The Journal of Educational Sociology, Vol. XXIII, No. 9 (May, 1950), pp. 560-68.

[5] Thomas J. Rillo and The Outdoor Education Association, Inc., "A Bibliography of Articles Pertaining to School Camping and Outdoor Education" (Carbondale, Illinois: The Outdoor Education Association, Inc., June, 1966), 28 pp. (Mimeographed.)

[6] Donald R. Hammerman, "A List of Doctoral Studies on Outdoor Education" (Oregon, Illinois: Lorado Taft Field Campus, Northern Illinois University, n.d.), 4 pp. (Mimeographed.)

[7] Outdoor Education Center for Southern Illinois, "Bibliography of Major Resources in Outdoor Education" (Carbondale, Illinois: Outdoor Education Center for Southern Illinois, Southern Illinois University, n.d.), 3 pp. (Mimeographed.)

[8] "Bibliography," California Journal of Elementary Education, Vol. XXVI, No. 2 (November, 1957), pp. 125-28.

[9] The Outdoor Education Association, Inc., "Bibliography--Outdoor Education," n.d., 4 pp.; "Bibliography of Dr. L. B. Sharp," n.d., 5 pp.; and "Publications by Dr. Lloyd B. Sharp," n.d., 2 pp. Available from The Outdoor Education Association, Inc., Carbondale, Illinois. (Mimeographed.)

Christie analyzed the term "outdoor education" in a 1965 article.[10] He gathered various definitions from four authoritative sources and discussed them. After alluding to the vagueness or incompleteness of these definitions, Christie derived another definition. Dr. Cockrell[11] conducted a survey which revealed that there was no standard terminology as to what was meant by "outdoor education." Knapp[12] surveyed sixty-nine resident outdoor education programs and listed varying definitions of outdoor education. Five of the schools that Knapp surveyed indicated specific definitions, and the remaining school programs defined outdoor education indirectly by stating purposes, values, principles, aims, or objectives. He found, however, a wide range of connotations as to exactly what the term included, and he felt that no single definition could encompass all aspects of outdoor education carried on under its name.[13]

This writer also personally questioned six outdoor education authorities as to whether or not they were familiar with any studies which attempted to define or clarify the definition of outdoor education. The authorities were Dr. Thomas J. Rillo, Dr. Donald R. Hammerman, Dr. William H. Freeberg, Dr. John W. Hug, Clifford E. Knapp, and Jay F. Thurston. None of them knew of such a study when questioned; however, no individual was requested to conduct a detailed search.

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[10] Robert Christie, "An Analysis of Outdoor Education," The Outdoor Teacher, Vol. II, No. 1 (December, 1965, Carbondale, Illinois: The Outdoor Education Center for Southern Illinois, Southern Illinois University), pp. 3-6.

[11] Lloyd L. Cockrell, "A Survey of Outdoor Teacher Education Programs in Higher Education," (unpublished research report, Northern Illinois University, 1962), p. 11.

[12] Clifford E. Knapp, "An Analysis of Principles, Aims, and General Objectives of Selected Resident Outdoor Education Programs" (unpublished research report, Southern Illinois University, 1963), p. 14.

[13] Ibid., pp. 53-54.

While perusing the files at the Outdoor Education Center at Southern Illinois University, this researcher discovered an apparently anonymous mimeographed and undated questionnaire entitled "The Outdoor Education Inventory." This inventory entered into definition but did so equivocally and chaotically. Also, there was no record indicating that the inventory was ever used. If it had been used, it was the opinion of this researcher that the reliability and validity of such an instrument would have been extremely limited.

It appeared to this writer that the term "outdoor education" had never been fully analyzed and defined. This researcher failed to locate any studies to indicate that there was agreement as to exactly what is meant by the term "outdoor education." The need for research was apparent.

CHAPTER III

DESIGN OF THE STUDY

There were four design phases to this study. The first concerned developing a rationale for selecting the research design. The second, third, and fourth phases involved, respectively, collecting the data for the study, analyzing the data, and briefly describing the exploratory study that prefaced this project.

Relation to the Problem

This first phase concerned developing a rationale for selecting the research methodology used in this study--namely, Q-methodology. Q-methodology, by definition, involved listing a series of statements and then having people reject or accept the statements on varying degrees of semantic value.

"The main strength of Q is its close affinity to theory. Structured Q sorts, by definition, are theoretically oriented."[1] Theoretical orientation means that the variables involved were logically and empirically related. These relationships were demonstrated through the development of factor arrays and factor types, which were laid out during the final stages of analysis for the researcher to see and interpret. The researcher could, therefore, readily visualize the sence of whatever it was that was common to several individuals. An mportant advantage of Q-methodology was its versatility, its analytic ssibilities. The last stage of the Q-method, factor analysis, was irtually unlimited in its possibilities. Moreover, factor analyses re in part concerned with profiles, and profiles were convenient for he study's diagnostic purposes.

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[1] Kerlinger, op. cit., pp. 592-93.

As usual, disadvantages accompany advantages. With the Q-ethod, "one can rarely work with . . . large samples."[2] The Q-method an rarely allow a researcher to generalize to larger populations, herefore limiting itself to the analysis and interpretation of speciic individuals. This disadvantage did not appreciably hamper this tudy because the problem concerned itself with a specific population nly. Generalizing was of no major interest.

Data Collection

Collecting the data required knowing something about the haracteristics of the respondents, constructing and administering a easuring instrument, and formulating a tabulation procedure.

Population Characteristics

There were certain characteristics unique to the population used in this study. First, each respondent was in some way associated with a college or university as a faculty member or an advanced degree candidate. In either case, the level of education was comparatively high and therefore affected the rating sheet's level of discourse. Second, it was reasonable to assume that every respondent had in some way been exposed to some kind of training in formal research. This author believed that this training would increase the respondents' interest in the study, therefore tending to produce a greater response. Third, because of each respondent's association with the Council, this researcher assumed that the respondents were familiar with the term "outdoor education" and had some conception of its meaning.

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[2] *Ibid.*, p. 594.

The respondents were selected in part because it was thought that each was a leader in outdoor education, that each understood the value of research, and that each would communicate his opinion. Considering all conditions known to this researcher, a rating sheet return of at least 70 percent was anticipated.

Rating Sheet Construction

Since this author was unable to discover any existing instrument designed to measure reliably and validly the desired qualities, one was constructed. The rating sheet construction entailed (1) selecting the appropriate content, (2) arranging its format, and (3) deciding its physical characteristics.

Selecting the content proved laborious. After a thorough examination of texts and articles which treated outdoor education as the major or one of the major topics and after a period of at least six months of personal inquiry into the various aspects of outdoor education, four broad categories of definition were constructed. These categories, their descriptions, and a comprehensive list of the statements ultimately selected to represent each category were as follows:

Category I: Those definitions that directly related outdoor education to recreation and/or physical education. The rating sheet statements chosen to represent this category and a further classification of the statements were as follows:

1. Statements stressing the teaching of selected activities while indoors:
    a) Recreation education for outdoor activities such as hunting, archery, fishing, canoeing, hiking, and camping taught INDOORS is outdoor education.
    b) Learning camping skills from a book while INDOORS is outdoor education.
2. Statements stressing the teaching of selected activities while outdoors:
    a) Recreation education for archery, fishing, hunting, camping, canoeing, hiking, and for other similar outdoor activities taught OUTDOORS is outdoor education.
    b) Learning how to pitch a tent by doing it in the OUTDOORS is outdoor education.
3. Statements indicative of the kind of outdoor environment:
    a) A hike to a mountain lake taken for recreational purposes ONLY (not as a school function) is outdoor education.
    b) Hiking on the city street for recreational purposes ONLY (not as a school function) is outdoor education.

Category II: Those definitions that synonymously equated outdoor education with other terms. The synonyms chosen for inclusion on the rating sheet and the completed statements were as follows:

1. School camping:

    Outdoor education is synonymous with school camping.

2. Natural science education:

   Natural science education, regardless of where it is taught, is outdoor education.

3. Nature interpretation:

   Outdoor education is another way of saying nature interpretation.

4. Nature study:

   Nature study, whether taught indoors OR outdoors, is outdoor education.

5. Conservation education:

   Conservation education, whether taught indoors OR outdoors is outdoor education.

6. Outdoor recreation:

   Outdoor recreation is the same as outdoor education.

7. Environmental education:

   Outdoor education is the same as environmental education.

8. Camping education:

   Outdoor education is synonymous with camping education.

Category III: Those definitions that directly related outdoor education to specific areas of the school curricula, that indicated the physical location of the learner, and that specified an attribute of the object observed by the learner. The classifications, subclassifications, and the completed statements were as follows:

1. Activities conducted outdoors, concerning natural objects or materials, and designed to convey concepts within the subject area of

   a) art:

      Drawing a picture of a tree for an art class while in the OUTDOORS is outdoor education.

b) mathematics:

Determining the height of a tree in a wilderness area for a mathematics class is outdoor education.

c) social studies:

A social studies field trip into the forest to study the herbs that the Indians ate is outdoor education.

d) language arts:

Writing one's impressions for an English class assignment of a bird in flight, while observing the bird OUTDOORS, is outdoor education.

e) conservation:

Discovering in the OUTDOORS how nature provides land cover to prevent erosion is outdoor education.

f) nature study:

(1) in a natural area:

A nature study course taught OUTDOORS in a wilderness area is outdoor education.

(2) not in a natural area:

A nature study class visiting a nature museum is outdoor education.

2. Activities conducted indoors, concerning natural objects or materials, and designed to convey concepts within the subject area of

a) art:

Drawing a picture of a bird for an art class, while INSIDE of the formal classroom, is outdoor education.

b) mathematics:

Calculating for a mathematics class, while INSIDE of the formal classroom, the usable timber from tree dimensions given in a textbook is outdoor education.

c) social studies:

A social studies class studying a textbook, while INDOORS, about the herbs that the Indians ate is outdoor education.

d) language arts:

Writing an essay about extinct birds, while INSIDE of the formal classroom, is outdoor education.

e) conservation:

Reading a book, while INSIDE of the formal classroom, on how nature provides land cover to prevent erosion is outdoor education.

f) nature study:

(1) having direct experience with nature:

Studying caged animals for a nature study class while INDOORS is outdoor education.

(2) not having direct experience with nature:

Viewing a movie on wild animal life, while INSIDE of the formal classroom, is outdoor education.

3. Activities conducted outdoors, concerning man-made objects or materials, and designed to convey concepts within the subject area of

a) art:

Drawing a picture of an Indian teepee for an art class while OUTDOORS is outdoor education.

b) mathematics:

Determining the height of a building for a mathematics class, while OUTSIDE of the formal classroom, is outdoor education.

c) social studies:

A social studies field trip to an historical Indian village in downtown Los Angeles is outdoor education.

d) language arts:

Writing one's impressions of a jet airplane as observed in flight, while on an English class field trip, is outdoor education.

e) conservation:

Learning about the structural design of a flood control dam by actually visiting a dam is outdoor education.

4. Activities conducted indoors, concerning man-made objects or materials, and designed to convey concepts within the subject area of

a) art:

Drawing a picture of an automobile for an art class while INSIDE of the formal classroom is outdoor education.

b) mathematics:

Calculating the volume of a coffee can for a mathematics class assignment, while INSIDE of the formal classroom, is outdoor education.

c) social studies:

A social studies class studying Indian artifacts, while INSIDE of the formal classroom, is outdoor education.

d) language arts:

Writing an English class essay, while INDOORS, about a field trip to a steel factory is outdoor education.

e) conservation:

Studying from a textbook, while INSIDE of the formal classroom, about the cost of building a dam to prevent land erosion is outdoor education.

Category IV: Those definitions that placed broad significance on outdoor education, that contrasted the interpretations of "outside," or that contrasted "outside" to "inside." The classifications and subclassifications of this category were as follows:

1. Statements made in the broadest sense concerning alternate aspects of outdoor education in relation to teaching and learning:

   a) the aspect of where something takes place:

      Outdoor education is concerned ONLY with the environment in which learning takes place.

   b) the aspect of what takes place:

      Outdoor education is concerned ONLY with what is being taught.

   c) the aspects of where something takes place and what takes place:

      Outdoor education is concerned ONLY with what is being taught AND where it is being taught.

2. Statements that contrasted the interpretations of the meaning of "outside:"

   a) "outside" meaning natural area:

      Outdoor education is education conducted OUTSIDE of the formal classroom and in a wilderness or other natural area ONLY. (This does not include a city street.)

   b) "outside" meaning non-natural area:

      Outdoor education is education conducted OUTSIDE of the formal classroom and on the city street ONLY. (This does not include a wilderness or other natural area.)

   c) "outside" meaning natural or non-natural area:

      Outdoor education is education conducted OUTSIDE of the formal classroom whether in a wilderness or other natural area OR on a city street.

3. Statements that contrasted "outside" to "inside:"

   a) "outside," but further contrasted "natural objects" to "man-made objects:"

      (1) natural objects:

         Any subject matter area taught OUTSIDE of the formal classroom involving the student directly with the NATURAL phenomenon being taught is outdoor education.

(2) man-made objects:

Any subject matter area taught OUTSIDE of the formal classroom involving the student directly with a MAN-MADE object is outdoor education.

b) "inside," but further contrasted "natural objects" to "man-made objects:"

(1) natural objects:

Any subject matter area taught INSIDE of the formal classroom involving the student directly with the NATURAL phenomenon being taught is outdoor education.

(2) man-made objects:

Any subject matter area taught INSIDE of the formal classroom involving the student directly with a MAN-MADE object is outdoor education.

The selection of the above listed statements for each category with their respective subclassifications was believed to be exhaustive of the possibilities; however, some combinations of elements were absurd while others were logically matched. If there were doubt as to whether to accept or reject a possible combination for inclusion into the rating sheet, it was accepted. This procedure would have tended to increase the instrument's content validity.[3] Certain statements served as consensus items since they obviously would, or would not, be considered part of outdoor education. For instance, for the purpose of teaching mathematics, a statement involving only man-made (non-natural) objects inside of the formal classroom could not logically be considered as outdoor education by the respondents.

In sum, there were 48 structured statements. Each respondent was requested to read each structured statement thoughtfully, and then respond by marking on a seven-point Likert scale the extent to which he agreed or disagreed with each statement. ~~(See Appendix C.)~~ None of the statements included the preparation for, or the follow-up of, an outdoor education experience. Each statement was so structured that it probed into one of the four categories of interest. There were 28 statements that exhausted a tri-facet matrix, scanning the major areas of the school curricula with allusions to teaching locations, media, and purposes. The other 20 statements pertained to the non-curricular aspects of outdoor education. Eight of these statements dealt with terms which might be considered synonymous with the term "outdoor education."

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[3] Ibid., pp. 445-47.

An equal-interval semantic valued Likert scale appeared directly below each statement. The interval spaces roughly represented "completely agree, almost completely agree, slightly agree, undecided, slightly disagree, almost completely disagree," and "completely disagree." Their assigned quantitative values ranged from seven through one, respectively. Two completed example statements preceded the test statements. The positions of "disagree" and "agree" were randomly reversed on the scale, neutralizing the scores of respondents who might have intentionally or inadvertently marked all left-hand or all right-hand spaces; these reversals tended to force the respondent to pay close attention to the value of each space by preventing him from marking a response set. One-half of the scales were opposite to the others, and care was taken to prevent the scales--for statements treating the same subjects--from being placed in the same direction. This placement was done with an IBM sorter and an IBM 407 accounting machine. Also, the respondents were asked not to retrace to change their answers when completing the rating sheet since the study was interested in first reactions.

Each statement was, in part, randomly ordered on the rating sheet. Consideration was, however, given to the likelihood of the meaning of a statement being influenced by a preceding statement and therefore such problems were avoided. Also, the simplest statements were placed first, in order to begin the respondent with ease. The statements were numbered on the rating sheet in groups of six. Within each group each statement was assigned a letter ranging from "a" through "f." This method of numbering and lettering was insignificant except that it provided a convenient way to refer to any specific statement while at the same time eliminating the use of numbers exceeding "8." Oftentimes a respondent will view the number of the last statement in order to determine the number of responses or marks required. Larger numbers tend to discourage respondents from answering; hence, this researcher attempted to avoid this potential problem.

Each statement was carefully pre-tested a number of times (prior to the exploratory study) and then coded according to its elements and key-punched on one data card for computer use. Also on the rating sheet were questions related to respondent characteristics and geographical data, to the respondent's personal opinion as to whether or not he was qualified to complete the questionnaire, and to any miscellaneous information or comments that the respondent might have wished to make. The first information requested from the respondent was his reaction to the test statements, followed by the questions requiring more than just a check mark. ~~(For further details, see Appendix C.)~~

The statements and rating scales were presented in a 24-page, 5" x 8" booklet lithographed on yellow paper. The size was convenient for handling, easy to read, and unique among other papers commonly found on a desk. The yellow paper permitted the rating sheet to be easily sighted and was generally pleasing to the eye. All of the above were designed to increase the response return.

The questions and booklets were pre-coded for easy key-punching and computer use.[4] A space for the accumulated data was placed after each pre-coded number to facilitate reading by the key-punch machine operators. Also, pre-coding allowed for the easy assigning of rating sheet identification numbers and permitted each of these identification numbers to be easily associated with the respondent's last name and state.

There were various steps taken in order to maximize the reliability of the rating sheet as a test instrument. First, effort was taken to make each statement as unambiguous as possible. This was done by submitting the statements to numerous pre-tests and to the scrutiny of communication experts at Southern Illinois University.

A paucity of statements covering the areas of inquiry would have tended to decrease reliability; hence, there were statements added to the original selection of statements which covered many of the same elements covered by other statements. In other words, certain important elements of interest to the study were repeated throughout different statements on the rating sheet. Also, every attempt was taken to increase the reliability of the rating sheet by making unambiguous instructions, which were pre-tested at various times by the same individuals and by different individuals. Also, some individuals were given the same instrument periodically over a period of days, and in some cases, over a period of weeks.

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[4] Charles H. Backstrom and Gerald D. Hursh, Survey Research (Evanston: Northwestern University Press, 1963), pp. 153-71.

Reliability is usually considered to be a technical matter whereas validity is more concerned with "the nature of 'reality' and the nature of the properties being measured, [and] is heavily philosophical."[5] The problem of constructing a series of statements and then placing them within a framework of a rating sheet and then optimistically assuming that the desired attitudes would actually be symbolized by marks on a constructed scale is a problem of construct validity.

The principal support of the instrument's construct validity was a product of two pre-tests and of an exploratory study, both completed prior to the major study reported herein. The test instrument was first administered to a group of this author's undergraduate students who were enrolled in an outdoor education course. In a fashion, this author exposed the students to certain known materials, lectures, and experiences that evinced a certain known attitude toward the meaning of the term "outdoor education." Prior to and after this exposure, the students were requested to complete a rating sheet. The results of the rating sheet given prior to the exposure indicated inconsistencies among the attitudes of the students toward outdoor education. The rating sheet completed after the course, however, indicated a consistency among the class members. Also, this consistency corresponded to the attitudes expressed in the course content, as interpreted by this author.

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[5] Kerlinger, op. cit., p. 459.

Similar results were found when a procedure almost identical to the one described above was administered to the students of a graduate level course taught by a colleague. The rating sheet was administered during the same period of time to a group taught with similar instructional materials. The above two pre-tests and their respective outcomes tended to support the instrument's validity. And, to further confirm the likelihood of the instrument having acceptable validity, an exploratory study was conducted. This exploratory study simulated the design of the final study. Specifically, the test instrument reflected the anticipated results of a selected sample having known attitudes toward outdoor education. The details of the study will be reported later in this report.

In sum, this researcher constructed a test instrument which he considered both reliable and valid for his purposes. The construction involved selecting the appropriate content, arranging a logical format, and deciding upon the size, color, and form of the rating sheet. The completed rating sheet is exhibited in Appendix C of this report.

Rating Sheet Administration

Administering the rating sheet instrument to the selected respondents entailed acquiring the most recent list of respondent addresses, designing the letters of transmittal which would accompany the rating sheets, and providing for adequate follow-up and control of the mailed materials.

The list of respondent names and addresses was obtained from the Council's headquarters in the National Education Association's main office building in Washington, D.C. ~~(See Appendix A.)~~ The list was dated June 20, 1967. This researcher wrote a personal letter dated January 23, 1968, to the Council's headquarters requesting their most current list of members and their addresses. On February 1, 1968, this author received a letter from the AAHPER Outdoor Education Project Director stating, "We do not have a more recent list of the members of the Council on Outdoor Education and Camping associated with colleges and universities than the one prepared in June 1967."[6] Since the rating sheets were to be mailed eleven days after receiving this reply, this author used the most current list of Council members and the most current list of their addresses available.

A rating sheet, a stamped return envelope, and a letter of transmittal were mailed to each respondent on February 12, 1968. The letter of transmittal stated the purpose and value of the study, attempted to motivate the respondents to participate, and gave them the necessary instructions. ~~(See Appendix B.)~~ Between February 12 and March 13 this first mailing produced an 80 percent return; i.e., 94 of the total 118 respondents returned their rating sheets within the first month. This researcher anticipated a 70 percent return using two follow-up requests; therefore, the 80 percent return without the use of follow-up requests was very high. Because of this, the study's validity was markedly increased.

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[6] Personal letter from Dr. Julian W. Smith to B. Ray Horn, dated February 1, 1968.

Prior to mailing the second letter of request, the addresses of the delinquent respondents were carefully checked for correctness against the professional membership directory of the American Park and Recreation Society.[7] It was likely that the Council members were also members of this Society. The second letter, dated March 13, ~~(see Appendix B)~~, stated that the respondent had not yet returned his rating sheet, indicated why he was selected as a respondent, and mentioned that he could remain anonymous if he so desired. A copy of the final results of the study was also promised. Included with this second letter was an additional copy of the rating sheet and a copy of the original letter of February 12. All correspondence relating to the study were mailed "first class air mail, please forward," and "return requested." Prior to sending a third letter, a 92 percent return had already been received. In other words, the second letter produced an additional 14 completed rating sheets, bringing the total returns to 108 out of a possible 118.

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[7] American Park and Recreation Society, Membership Directory, 1967 (Washington, D.C.: National Recreation and Park Association, 1967), 56 pp.

The third and final request was dated and mailed March 28. (See Appendix B.) It was simply an informal reminder with no enclosures. This reminder produced an additional return of six rating sheets, bringing the final total to 114 out of a possible 118. This 97 percent return was extraordinary and tended to support the earlier stated conviction that the selected respondents were specifically reliable.

Of the total 114 returned rating sheets, seven were not usable. Four of these seven were disqualified because they were not completed by the specified respondents. The project examined the responses of specific persons. Two rating sheets were eliminated because they were returned blank except for a name and address. In one of these two cases, a letter which did not lend itself to quantification accompanied the blank rating sheet. The last rating sheet to be disqualified was received too late to be machine analyzed and therefore too late to be in this study. Since seven of the total 114 returned rating sheets were discarded, 107 were ultimately submitted to machine analysis and hence are interpreted in this report.

The administration of the rating sheet test instrument described above involved a careful control of the respondent addresses, effectual correspondence, accurate mailing procedures, and proper timing. It was felt by this researcher that the adequate treatment of these areas would increase, and did increase, the study's validity and reliability. These desiderata, however, would have lost their significance without accurate tabulation procedures.

Data Tabulation

Upon the receipt of each returned rating sheet, a numerical value was assigned by the researcher to each computer pre-code number. All pre-code numbers ranged between "C1" and "C80," corresponding to the standard 80-column general purpose computer punch-card. ~~(See Appendix C.)~~

Accordingly, rating sheet identification numbers were assigned in the order that the rating sheets were received. The assigned numbers ranged between 001 and 118, 118 being the maximum possible return. Punch-card columns were reserved for such data as the respondent's agency, his name, address, title, experience, and his opinion as to whether or not he personally felt that he knew what outdoor education was. An area for the respondent's comments was also provided which was indexed and coded as follows: "0" meant "no comment;" "1" indicated that a comment was made; and "2" indicated that the respondent made a comment, part of which stated or implied a desire to receive the final results. The assigned value for the other data can be found juxtaposed next to the appropriate question on the rating sheet. Filter questions were used in various instances to determine whether or not the respondent qualified to answer a succeeding series of questions.

Each rating sheet was personally scored and checked by this researcher, the data were transferred to a computer General Purpose Data Form, and then key-punched by the Southern Illinois' Data

Processing and Computing Center using standard procedures.[8] The final data cards, however, were reviewed and corrected by this researcher to ensure accuracy.

As a point of information, the Docutran method of transferring data onto computer cards was not used because of the desirability of having each respondent's name and state appear directly on the data card. This would facilitate interpretation and increase the probability of discovering any new crossbreaks in the data. The advantages of using the Docutran data sheets, therefore, were not sufficiently great to warrant their usage since mixed data--numeric and alphabetic--are not easily handled by Docutran without special programming and processing.

The data collection techniques described entailed an understanding of the characteristics of the selected population, the construction and administration of a valid and reliable measuring instrument, and the establishment of an accurate data tabulation procedure. All of the above were viewed from this author's belief that the problem's objectives are first determined and then the best available methods are selected to achieve those objectives. In other words, the problem under treatment determined the design of the data gathering and tabulating techniques.

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[8] Walter R. Borg, Educational Research (New York: David McKay Company, Inc., 1963), pp. 346-59, and Charles H. Backstrom and Gerald D. Hursh, op. cit., pp. 153-71.

Data Analysis

The data from 107 rating sheets were submitted for factor analysis, the ultimate stage of Q-methodology. This analysis was the third phase of the total design. Described herein is an overview of the factor analysis.

Factor analysis lent itself appropriately to the solution of the problem.

> Factor analysis is a method for reducing a large number of measures to a smaller number of measures (factors) by discovering which measures "go together" (which measures measure the same thing) and the relations between these clusters of measures that go together.[9]

The advantages of a high-speed computer were readily noticeable during this study. The computer most readily available, hence used, was an IBM 7040 which was housed at Southern Illinois University. The University's Data Processing and Computing Center did not, however, have available the desired program. It was therefore necessary to obtain the program elsewhere.[10]

> This program provides a single-execution method for handling all phases of Stephenson's Q-Analysis.[11] It is a multiphase program which allows data manipulation, correlation, principal components factoring, orthogonal or oblique rotation to simple structure, and a summary procedure called WRAP[12] which in Q-Analysis indicates the response patterns of the different types of people to test items.
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[9] Kerlinger, op. cit., pp. 453-54.

[10] The program was obtianed from the University of Iowa through the initiative of Dr. L. Erwin Atwood, presently with Southern Illinois University.

[11] William Stephenson, The Study of Behavior (Chicago: University of Chicago Press, 1953).

[12] Weighted Rotational Analytic Procedure.

> The program is designed primarily for use in connection with Q studies; being merely an extended factoring program, it may be used in more customary 'R' studies. In this case, the final phase of the program, WRAP, yields a sort of 'factoring score' for each subject to aid the investigator in identifying the subject's relative performance within each factor. In Q studies, this phase provides a summary of the response of each of the factor types of people to each of the testing items.
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> . . . .
>
> The program is written in FORTRAN IV for Version 9 of the IBM 7044[13] . . . . In addition to the normal input and output units, the program requires one external storage unit on which the several phases of the program are maintained, and another unit (FORTRAN logical unit 1) for intermediate storage.
>
> . . . .
>
> The program assumes these maximums: number of variables, 109; number of observations, 130; number of factors, 10.[14]

In this study there were 107 variables (persons) and 48 observations (statements). The original solution extracted ten factors, the maximum number allowable by the program. On the second analysis, the program was coded to extract only three factors. The rationale behind this was based, in part, upon the percentage of total variance held by each factor on the first analysis; factors four through ten accounted for an insignificant amount of the total variance and were therefore disregarded for ease of handling and interpreting the final results. A manipulation of this kind was not unusual. All of the disregarded factors had less than three percent of the total factor variance.

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[13] The IBM 7044 is an updated version of the IBM 7040. The IBM 7044 and 7040 programs are interchangeable.

[14] N. Van Tubergen, "PROGRAM - Q Analysis (QUANAL)," Basic Version 2 (Mass Communications Research Bureau, School of Journalism, University of Iowa, n.d.), pp. 1-2. (Mimeographed.) Although the material is undated, the material is known to have been written in the fall, 1967.

Additional reasons for discarding the residual factors were the facts that only two of the total 107 respondents had their highest positive factor loading on factor four and no respondents had their highest positive factor loading on factors five through ten. Also, the two respondents who loaded highest on factor four demonstrated factor loadings very close to their second highest positive loading, making the relevance of the factor and the loading less important than the other factors and loadings.

A factor analysis implies a certain number of assumptions and limitations. Fruchter reports the following assumptions:

> A basic assumption of factor analysis is that a battery of intercorrelated variables has common factors running through it and that the scores of an individual can be represented more economically in terms of these reference factors.
>
> . . . .
>
> A second assumption of factor analysis is that the correlation between two variables . . . can be accounted for by the nature and extent of their common factor loadings.[15]

These assumptions were made prior to the factor analysis, and the final results tended to establish the likelihood that there were common factors and that they were being accounted for by common factor loadings.

Some limitations of the factor analysis were that the derived solutions are seldom unique and that the factor pattern is directly dependent upon the population studied and cannot be considared typic to a larger or different population.[16] These limitations were standard and did not hamper the study.

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[15] Benjamin Fruchter, Introduction to Factor Analysis (New York: D. Van Nostrand Company, Inc., 1954), pp. 44-50.

In sum, the program constructed a matrix of intercorrelations which was formed by correlating every person's responses with every other person's responses. Pearson produce moment correlation coefficients were used.[17] The entire correlation matrix was then factor analyzed using a principal components solution with rotation to simple structure. For easy comparison, all scores were converted to z-scores. A plus or minus one standard deviation on a normalized distribution was the criterion indicating a substantial difference between types.[18] Positive scores indicated the degree of agreement to which statements should, according to the respondents, be accepted as pertinent to the definition of the term "outdoor education." Similarly, negative scores indicated the degree of agreement to which certain statements should, in the opinion of the respondents, be rejected as part of the definition of the term "outdoor education."

Descending arrays of z-scores were formed for each factor indicating the most accepted and the most rejected statements. This provided a preference ordering for each factor. From the various factor arrays, types were formed and assigned identification numbers using Roman numerals. Each z-score factor array was then compared with every other factor array. This assisted greatly in differentiating one type from another. Type preferences were described, compared, contrasted, and interpreted.

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[16] M. Gladys Scott (ed.), Research Methods in Health, Physical Education, and Recreation (Washington, D.C.: American Association for Health, Physical Education, and Recreation, 1959), p. 208.

[17] Paul Blommers and E. F. Lindquist, Elementary Statistical Methods in Psychology and Education (Boston: Houghton-Mifflin Co., 1960), pp. 361-86.

[18] Since there were no appropriate statistical techniques for verifying significant differences between factor arrays, it was assumed that a difference of plus or minus one standard deviation on the D-distribution was a substantial difference between any two types on any given statements.

Exploratory Study

The design of the final study was pre-tested and validated on an exploratory study that prefaced the collection of data from the AAHPER Council.[19] For the purposed of the exploratory study, the respondents were selected as a matter of convenience from the staff, faculty, and students of Southern Illinois University. Since the study was exploratory, respondent selection was from a population having a generally known attitude toward outdoor education. This was further verified when the observed outcomes were as predicted. The respondents reacted to a 48-item structured rating sheet that was almost identical to the one used in the final study.

The report described a surprisingly large majority of respondents who clustered substantially to produce essentially a one-factor solution with two residual factors. The researcher discovered a single element or facet that was common throughout the areas of agreement. This element was used by the majority of the respondents as the criterion for defining the term "outdoor education."

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[19] B. Ray Horn, "An Exploratory Factor Analysis of the Definitions of the Term 'Outdoor Education'" (unpublished research paper submitted in partial fulfillment of the requirements for JRNL 433, Measurement of Public Opinion, Department of Journalism, Southern Illinois University, 1967), 22 pp.

The exploratory study accomplished its purpose in that it pretested the instrument, examined Q-method applicability, and demonstrated that the nature of the problem and the data treatment had lent themselves readily to a factor analytic kind of analysis and interpretation.

This chapter, the "Design of the Study," may be summarized by iterating the four design phases. The first involved developing a rationale for selecting the design; the second pertained to the method of data collection; the third concerned the data analysis; and the fourth and final phase briefly described the exploratory study that preceded this venture into the semantics of definition.

CHAPTER IV

PRESENTATION OF ANALYZED DATA

After ascertaining the rotated factor loadings, (see Appendix r), the customary next step was to identify the content and nature of the factors. This was done by inferring what the respondents with high positive loadings on a factor had in common with the other respndents who had high positive loading on the same factor. Those elements which were common to most of the respondents who had high loadings on a particular factor were the elements that collectively constituted an attitude type.

Prefatory to describing the characteristics of each type, the consensus items were examined. The consensus items were those statements of agreement--as to whether a statement should be accepted or rejected as part of the definition of the term "outdoor education"--that seemed to cut across all attitude types. The computer arrayed according to their z-scores these consensus statements to facilitate observation and interpretation.

Every statement was also arrayed according to its z-score for each attitude type. The computer also arrayed for observation and interpretation the statements which compared and contrasted each type with every other type and each type with all other types combined. In other words, the computer presented each type, differentiated one type from another type, differentiated one type from all other types combined, and then calculated the correlation coefficients between the various types.

Summary descriptions of the consensus statements, of the statements characteristic to each type, and of the correlations between the types were as follows:

Consensus Statements

Consensus statements were defined as test statements upon which all of the respondents were in general agreement and test statements for which there was no z-score difference as great as ± 1.0 across all types. These statements were not considered unique to any single type but were common to all types. There were ten of these statements. (See Table 1.) Five exhibited, because of their z-scores, these items which the respondents generally agreed should be included within the scope of the term "outdoor education." On three of the ten items, the respondents tended to acquiesce; they were not sure whether these were outdoor education or not. Two items of the ten were discarded as part of outdoor education. The criterion for acceptance as part of outdoor education was a z-score of +1.00, and the criterion for rejection was -1.00.

A common element found among the accepted statements was that all of the functions carried on under the scope of outdoor education were conducted outdoors. The purpose for conducting the activity did not seem to be important; there was no discrimination among subject matter areas in the consensus items. Recreation outdoors and physical education outdoors were also among the consensus statements. There seemed, however, to be no specification as to the "kind of outdoors." It apparently did not matter whether "outdoors" meant "in a natural or wilderness area" or otherwise.

There were three statements upon which most of the respondents tended to acquiesce. The respondents were not sure whether they should or should not limit the relationship between recreation and outdoor education to include only those recreation functions carried on in a natural or wilderness area. The respondents also appeared to be in another dilemma; they could not decide whether or not to include as synonyms the terms "environmental education" and "outdoor recreation." The respondents were indecisive.

There were two statements upon which the respondents felt were definitely not part of outdoor education. Activities conducted indoors and concerning man-made (non-natural) materials as the object or subject of study were rejected, as predicted by the researcher. These items were absurdly and unconceivably outdoor education.

In sum, the consensus items indicated that any activity conducted outdoors, whether in a wilderness area or not, was outdoor education. The respondents were apparently puzzled whether or not to consider "outdoor recreation" and "environmental education" as terms synonymous with "outdoor education." The respondents rejected statements which specified indoor study of man-made objects.

Attitude Types

The attitude types were derived from the extracted factors. "A *factor* is a construct, a hypothetical entity that is assumed to underlie tests and test performance."[1] The test items that collectively made-up a factor were interpreted to reflect the elements most nearly unique to that factor. The respondents who had in common certain distinguishing characteristics were members of the same type and therefore collectively constituted that type. A respondent was said to belong to a particular type when his factor loading for that type was greater than for any other type. For convenience, a Roman numeral was assigned to each distinctive attitude type.

Type I

The first attitude type accounted for 40.76 percent of the total variance.[2] Since this was the strongest type, the common items within this type were of paramount importance for the purposes of this study. For Type I there were twenty statements upon which there was common agreement. Eight of these statements indicated agreement as to what had been included within the scope of outdoor education. Twelve of these statements implied what had been excluded in defining outdoor education. (See Table 2.)

Within the eight statements which were included in the definition by Type I, there was ostensibly two common elements: the location of the specific activity and the nature of the object being studied (natural versus man-made). All Type I individuals agreed that an activity must be conducted outdoors, in contrast to the formal classroom, in order to be considered outdoor education. Type I also believed that the nature of the object under study must be a natural or non-man-made object. Apparently, though, they believed that the purpose of an activity had little or nothing to do with determining whether the activity was outdoor education or not, for they did not concern themselves with the purpose of an activity. To the respondents of this type, the purpose could have been either social studies, nature study, conservation, English, or mathematics. There were, however, two discrepancies worth noting. In relation to conservation education, it apparently made no difference to Type I whether the object under study was man-made or natural. This type felt that as long as conservation was taught outside of the formal classroom then it was outdoor education, regardless or whether or not the object of study was natural. The second discrepancy was in relation to nature study. Type I respondents apparently felt that studying nature through the use of the motion picture medium inside of the formal classroom was still outdoor education, even though the learner was inside and has no direct contact with nature.

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[1] Kerlinger, *op. cit.*, p. 650.

[2] Fruchter, *op. cit.*, p. 43, and Solomon Diamond, *Information and Error: An Introduction to Statistical Analysis* (New York: Basic Books, Inc., 1959), pp. 63-66.

Type I respondents believed that the terms "school camping," "outdoor recreation," and "camping education" were definitely not synonymous with "outdoor education." They also believed that something did not have to take place in a natural or wilderness area to be considered outdoor education. Although this type's major criterion for defining outdoor education was the observed object, they did not delimit their definition to include only these attributes. In sum, they felt that almost anything conducted under the guise of conservation education or nature study was outdoor education, but everything else had to be taught outdoors using natural materials to be called outdoor education.

There were thirteen substantial differences between Type I and all of the other types combined. (See Table 8.) Type I desired to include almost anything carried on under the title of nature study or conservation education as being outdoor education whereas the other types reacted negatively toward this issue. The other types wanted to use the criterion of where something was taught and what was being taught whereas Type I insisted upon making an exception for conservation education and nature study. The other types, in contrast to Type I, desired to make a close association among nature interpretation, camping education, and outdoor education.

Type II

Type II, accounting for 10.84 percent of the total variance, was positively correlated with Type I (r = 0.592; see Table 11), which indicated that they had many similar agreements and disagreements. Type II had nineteen common items. Twelve of these items reflected those characteristics which this type felt should be included within the scope of outdoor education. The common criterion or stratum was again, as in Type I, the location--namely, the outdoors. The criterion for rejection reflected in all instances was the location--indoors. This Type, however, tended to reject indoor activities involving non-natural objects more than indoor activities involving natural objects. Although Type II generally felt that the nature of the object or phenomenon examined was not an outdoor education criterion, they felt that the area of conservation education was an exception. They felt that conservation was outdoor education regardless of whether it concerned coming in direct contact with nature or not. Nature study not taught outside in a natural area was not considered outdoor education by this Type. This, of course, was in contrast to Type I which felt that nature study was outdoor education even though there was no direct experience with nature involved. (See Table 5.) For Type II, nature study was outdoor education if and only if it involved direct contact with nature in an outdoor setting.

Type II wanted the meaning of "outdoors" to include anything outside of the formal classroom, whether a wilderness or natural area or not. They also felt that recreation education and physical education were outdoor education if and only if the activities were conducted outdoors in a natural or wilderness area. They did not feel that studying about outdoor recreation activities while indoors was outdoor education. Type II also avoided equating outdoor education with any certain synonym; that is, they did not firmly accept or reject any particular synonym but remained uncommitted. Types II and I were adversaries in that they were in disagreement as to whether "outdoors" meant outside of the formal classroom or "outdoors" meant a natural or wilderness area. Even though Types II and I used some criteria to determine if something was outdoor education or not, they both readily made inconsistent exceptions to the criteria they emphasized.

Type II differed most substantially from all of the other types combined in that Type II emphasized their belief that something must be taught almost exclusively outdoors in order to be outdoor education. Type II's concept of "outdoors," as we recall, meant anywhere outside of the formal classroom. (See Table 9.) The only substantial disagreement between Type II and all other types combined was that they included those things done under the guise of conservation.

Type III

Type III, which accounted for 5.52 percent of the total variance, was positively correlated with Type I (r = 0.617) and with Type II (r = 0.482; see Table 11). The criterion that this type apparently used to include a statement within the definition of outdoor education was one of location. Generally, if the subject or activity was conducted outdoors, it was considered outdoor education. Within this type there were eighteen common items. There were nine statements which were accepted, of which five deserve special mention. (See Table 4.) Two statements refer directly to what this type treated as synonyms with the term "outdoor education;" they were, in order of the significance placed upon them, "conservation education" and "nature interpretation." As an attitude group, the respondents falling within this type considered these two terms as directly equitable and synonymous with the term "outdoor education."

The respondents of this third type were considerably more liberal in defining outdoor education. This type accepted recreation education and physical education as outdoor education as long as the activity had something to do with the outdoors. Not even a direct experience with nature was necessary; even studying about the outdoors while indoors was accepted as part of outdoor education. Also, almost anything to do with the outdoor environment--nature study, conservation education, writing about birds, studying about Indian foods, etc.--was said to be outdoor education. Furthermore, this type rejected every activity not concerned with a natural object, and they rejected any activity not conducted in a wilderness or natural area. Paradoxically, there was one major discrepancy. Recreation education outdoors and physical education outdoors tended to be outdoor education no matter what was observed or what the activity was, as long as it was in a wilderness or natural area. But, on the other hand, some school curriculum areas (e.g., English and mathematics) were not outdoor education even though they were taught outdoors. The data from this type tended to imply that outdoor education was a place for something to happen and not part of the happening (a medium, a method, a tool, etc.). The only exceptions to this were in the areas of conservation education and nature interpretation. These exceptions in themselves tended to be nebulous and minor when compared to the other attributes of this type.

There were eleven items substantially marking the differences between Types III and I. (See Table 6.) For some reason unknown to this researcher the subject area of art seemed to be treated differently by the two types. Type III readily rejected art taught outdoors, regardless of what was being drawn, whether using natural materials or not, whereas Type I readily accepted it. They also were opponents as to the choice of a synonym for outdoor education. Type III, the most liberal group, evinced a couple of apparently related synonyms as being easily equitable to outdoor education whereas Type I accepted no synonym.

These two attitude types were in some ways and some dimensions adversaries. The correlation between the two types was not considered low (r = 0.617), but the areas of discrepancy, albeit few, were sharp. The correlation between Types III and II was lower than the correlation between Types III and I (r = 0.482 and 0.617, respectively; see Table 11). Types III and II differed substantially on seventeen items (see Table 7). Type II desired to reject nature study per se as part of outdoor education whereas Type III had a greater tendency to accept it, though not emphatically. Type II rejected teaching outdoor recreation and outdoor physical education activities while indoors as outdoor education whereas Type III, viewing outdoor education in a broader sense, included the teaching of these activities within the scope of outdoor education. Type II also more readily accepted the teaching of the subject areas of art and mathematics, when they involved natural phenomenon outdoors, as within the scope of outdoor education than did Type III.

Type III was substantially different from all other types combined on six items. (See Table 10.) The greatest differences were in reference to whether or not a subject matter area taught outdoors, but not involving natural materials as the object of study, would be considered part of outdoor education. Type III did not consider this part of the term whereas the other types generally indicated that they accepted these as part of the definition. Another contrast was that Type III was willing to include activities which were recreational or physical educational as outdoor education to a much greater extent than were all of the other types combined. Type III also had a greater desire to place the term "nature study" synonymously with "outdoor education" than were the other types. There were other minor differences between Type III and all other types combined but none significant enough to warrant mention here.

Type IV

Since there were only two respondents who loaded the highest on this type, Type IV was not as substantial as the other types. Type IV correlated positively, but relatively low, with Types II and III, and negatively with Type I (r = 0.088, 0.206, and -0.128, respectively; see Table 11). Type IV was formed because 28.47 percent of Type I was negative. The program extracted the negative items from Type I, made them positive, and formed them into Type IV.

The two isolated respondents appearing on this Type exhibited twenty common statements which were in many instances absurd. They were inconsistent and contradictory. This researcher conjectured that these two respondents did not complete the rating sheet carefully and were therefore singled out as deviant and relatively uncorrelated cases by the computer.

Type IV had eleven statements to which the two respondents agreed should be included within the definition of outdoor education. A direct contradiction was that the respondents agreed that an activity conducted indoors involving non-natural objects should be included within outdoor education while at the same time agreed that an activity conducted outdoors involving natural objects should also be included in outdoor education. Furthermore, there were statements rejected covering the same elements. In other words, these respondents accepted and at the same time rejected the elements of definition. They would accept both indoor and outdoor activities, both subjects dealing with natural and non-natural objects; and they would accept these across various subject matter areas which evinced no subject matter discrimination.

The only sorting that made any sense to this researcher was in relation to the "direct experience" criterion. Indoor activities involving non-natural objects with which the learner was having direct experience were rejected whereas outdoor activities involving natural objects with which the learner was having direct experience were accepted as outdoor education.

There was apparently no discernible pattern for Type IV that demonstrated that any particular criterion was used to accept or reject statements as elements of outdoor education. Since there were only two respondents of a total of 107 examined appearing on this type, the type was considered deviant and of less importance than the other types.

Correlations Among Types

The correlations among the various types appear in Table 11. Types I and III were the most highly correlated among all of the types (r = 0.617). The second most highly and positively correlated were Types I and II (r = 0.592); the third, Types II and III (r = 0.482); the fourth, Types III and IV (r = 0.206); the fifth, Types II and IV (r = 0.088); and the least were Types I and IV, which were negatively correlated (r = -0.128).

Types IV failed to correlate substantially with any other type, confirming its deviance mentioned earlier. Types I, II, and III, however, correlated substantially to indicate some areas of agreement, which were described under the section of this chapter dealing with the statements common to all types. The number of respondents appearing on each factor, hence Type, excluding Type IV which had only two, were as follows: Type I, 37; Type II, 40; Type III, 28. This sorting indicated that the problem under consideration in this study was essentially a three-factor solution; the respondents tended to cluster into three distinct attitude types. There were, however, strata of agreement which crossed all of these attitude types, but these were less distinct when compared with those strata which did not cross all types.

This chapter concerned itself with the descriptions, comparisons, contrasts, and substantiations of the attitude types derived from the factors extracted from an analysis of the data. Three almost equal-sized clusters or groups of respondents, and one residual group, emerged as a consequent of the analysis.

TABLE 1

CONSENSUS STATEMENTS AND AVERAGE Z-SCORES

Number	Statement	Average Z-Score
C74	A nature study course taught OUTDOORS in a wilderness area is outdoor education.	1.55
C52	Recreation education for archery, fishing, hunting, camping, canoeing, hiking, and for other similar outdoor activities taught OUTDOORS is outdoor education.	1.46
C68	Writing one's impressions for an English class assignment of a bird in flight, while observing the bird OUTDOORS, is outdoor education.	1.34
C35	Learning how to pitch a tent by doing it in the OUTDOORS is outdoor education.	1.20
C34	Any subject matter area taught OUTSIDE of the formal classroom involving the student directly with the NATURAL phenomenon being taught is outdoor education.	1.15
C57	A hike to a mountain lake taken for recreational purposes ONLY (not as a school function) is outdoor education.	0.32
C59	Outdoor education is the same as environmental education.	-0.25
C55	Outdoor recreation is the same as outdoor education.	-0.68
C70	Any subject matter area taught INSIDE of the formal classroom involving the student directly with a MAN-MADE object is outdoor education.	-1.30
C60	Calculating the volume of a coffee can for a mathematics class assignment, while INSIDE of the formal classroom, is outdoor education.	-1.59

TABLE 2

TYPE I STATEMENTS AND Z-SCORES

Number	Statements Most Accepted	Z-Score
C61	A social studies field trip into the forest to study the herbs that the Indians ate is outdoor education.	1.48
C74	A nature study course taught OUTDOORS in a wilderness area is outdoor education.	1.39
C46	Discovering in the OUTDOORS how nature provides land cover to prevent erosion is outdoor education.	1.38
C65	Learning about the structural design of a flood control dam by actually visiting a dam is outdoor education.	1.36
C68	Writing one's impressions for an English class assignment of a bird in flight, while observing the bird OUTDOORS, is outdoor education.	1.34
C41	Determining the height of a tree in a wilderness area for a mathematics class is outdoor education.	1.31
C36	Viewing a movie on wild animal life, while INSIDE of the formal classroom, is outdoor education.	1.10
C30	A nature study class visiting a nature museum is outdoor education.	1.00
	Statements Most Rejected	
C40	Outdoor education is synonymous with school camping.	-1.00
C77	Outdoor education is concerned ONLY with what is being taught AND where it is being taught.	-1.23
C69	Outdoor education is education conducted OUTSIDE of the formal classroom and in a wilderness or other natural area ONLY. (This does not include a city street.)	-1.26

TABLE 2--Continued

Number	Statements Most Rejected	Z-Score
C53	Writing an English class essay, while INDOORS, about a field trip to a steel factory is outdoor education.	-1.30
C55	Outdoor recreation is the same as outdoor education.	-1.34
C70	Any subject matter area taught INSIDE of the formal classroom involving the student directly with a MAN-MADE object is outdoor education.	-1.35
C60	Calculating the volume of a coffee can for a mathematics class assignment, while INSIDE of the formal classroom, is outdoor education.	-1.39
C73	Outdoor education is synonymous with camping education.	-1.43
C31	Outdoor education is concerned ONLY with the environment in which learning takes place.	-1.69
C66	Outdoor education is education conducted OUTSIDE of the formal classroom and on the city street ONLY. (This does not include a wilderness or other natural area.)	-1.87
C33	Outdoor education is concerned ONLY with what is being taught.	-1.90
C51	Drawing a picture of an automobile for an art class while INSIDE of the formal classroom is outdoor education.	-1.97

TABLE 3

TYPE II STATEMENTS AND Z-SCORES

Number	Statements Most Accepted	Z-Score
C46	Discovering in the OUTDOORS how nature provides land cover to prevent erosion is outdoor education.	1.74
C61	A social studies field trip into the forest to study the herbs that the Indians ate is outdoor education.	1.72
C74	A nature study course taught OUTDOORS in a wilderness area is outdoor education.	1.64
C41	Determining the height of a tree in a wilderness area for a mathematics class is outdoor education.	1.62
C52	Recreation education for archery, fishing, hunting, camping, canoeing, hiking, and for other similar outdoor activities taught OUTDOORS is outdoor education.	1.55
C62	Drawing a picture of a tree for an art class while in the OUTDOORS is outdoor education.	1.54
C65	Learning about the structural design of a flood control dam by actually visiting a dam is outdoor education.	1.50
C68	Writing one's impressions for an English class assignment of a bird in flight, while observing the bird OUTDOORS, is outdoor education.	1.49
C34	Any subject matter area taught OUTSIDE of the formal classroom involving the student directly with the NATURAL phenomenon being taught is outdoor education.	1.48
C56	Outdoor education is education conducted OUTSIDE of the formal classroom whether in a wilderness or other natural area OR on a city street.	1.35
C35	Learning how to pitch a tent by doing it in the OUTDOORS is outdoor education.	1.13

TABLE 3--Continued

Number	Statements Most Accepted	Z-Score
C63	A social studies field trip to an historical Indian village in downtown Los Angeles is outdoor education.	1.02
	Statements Most Rejected	
C64	Writing an essay about extinct birds, while INSIDE of the formal classroom, is outdoor education.	-1.02
C71	Drawing a picture of a bird for an art class, while INSIDE of the formal classroom, is outdoor education.	-1.05
C58	Calculating for a mathematics class, while INSIDE of the formal classroom, the usable timber from tree dimensions given in a textbook is outdoor education.	-1.08
C39	A social studies class studying a textbook, while INDOORS, about the herbs that the Indians ate is outdoor education.	-1.13
C70	Any subject matter area taught INSIDE of the formal classroom involving the student directly with a MAN-MADE object is outdoor education.	-1.24
C60	Calculating the volume of a coffee can for a mathematics class assignment, while INSIDE of the formal classroom, is outdoor education.	-1.26
C51	Drawing a picture of an automobile for an art class while INSIDE of the formal classroom is outdoor education.	-1.29

TABLE 4

TYPE III STATEMENTS AND Z-SCORES

Number	Statements Most Accepted	Z-Score
C52	Recreation education for archery, fishing, hunting, camping, canoeing, hiking, and for other similar outdoor activities taught OUTDOORS is outdoor education.	1.86
C74	A nature study course taught OUTDOORS in a wilderness area is outdoor education.	1.83
C35	Learning how to pitch a tent by doing it in the OUTDOORS is outdoor education.	1.49
C54	Conservation education, whether taught indoors OR outdoors is outdoor education.	1.45
C75	Recreation education for outdoor activities such as hunting, archery, fishing, canoeing, hiking, and camping taught INDOORS is outdoor education.	1.41
C46	Discovering in the OUTDOORS how nature provides land cover to prevent erosion is outdoor education.	1.34
C42	Outdoor education is another way of saying nature interpretation.	1.12
C61	A social studies field trip into the forest to study the herbs that the Indians ate is outdoor education.	1.03
C68	Writing one's impressions for an English class assignment of a bird in flight, while observing the bird OUTDOORS, is outdoor education.	1.02
	Statements Most Rejected	
C66	Outdoor education is education conducted OUTSIDE of the formal classroom and on the city street ONLY. (This does not include a wilderness or other natural area.)	-1.02

TABLE 4--Continued

Number	Statements Most Rejected	Z-Score
C47	Writing one's impressions of a jet airplane as observed in flight, while on an English class field trip, is outdoor education.	-1.07
C72	Hiking on the city street for recreational purposes ONLY (not as a school function) is outdoor education.	-1.35
C71	Drawing a picture of a bird for an art class, while INSIDE of the formal classroom, is outdoor education.	-1.44
C51	Drawing a picture of an automobile for an art class while INSIDE of the formal classroom is outdoor education.	-1.55
C70	Any subject matter area taught INSIDE of the formal classroom involving the student directly with a MAN-MADE object is outdoor education.	-1.58
C67	Determining the height of a building for a mathematics class, while OUTSIDE of the formal classroom, is outdoor education.	-1.62
C53	Writing an English class essay, while INDOORS, about a field trip to a steel factory is outdoor education.	-1.82
C60	Calculating the volume of a coffee can for a mathematics class assignment, while INSIDE of the formal classroom, is outdoor education.	-1.85

TABLE 5

STATEMENTS WITH THE GREATEST DIFFERENCE BETWEEN TYPES I AND II

Number	Statement	Z-Score Difference
C36	Viewing a movie on wild animal life, while INSIDE of the formal classroom, is outdoor education.	1.702
C39	A social studies class studying a textbook, while INDOORS, about the herbs that the Indians ate is outdoor education.	1.519
C76	Reading a book, while INSIDE of the formal classroom, on how nature provides land cover to prevent erosion is outdoor education.	1.411
C37	A social studies class studying Indian artifacts, while INSIDE of the formal classroom, is outdoor education.	1.396
C48	Studying from a textbook, while INSIDE of the formal classroom, about the cost of building a dam to prevent land erosion is outdoor education.	1.345
C32	Studying caged animals for a nature study class while INDOORS is outdoor education.	1.297
C38	Natural science education, regardless of where it is taught, is outdoor education.	1.264
C50	Nature study, whether taught indoors OR outdoors, is outdoor education.	1.153
C44	Any subject matter area taught INSIDE of the formal classroom involving the student directly with the NATURAL phenomenon being taught is outdoor education.	1.152
C30	A nature study class visiting a nature museum is outdoor education.	1.140
C54	Conservation education, whether taught indoors OR outdoors is outdoor education.	1.124

TABLE 5--Continued

Number	Statement	Z-Score Difference
C66	Outdoor education is education conducted OUTSIDE of the formal classroom and on the city street ONLY. (This does not include a wilderness or other natural area.)	-1.001
C69	Outdoor education is education conducted OUTSIDE of the formal classroom and in a wilderness or other natural area ONLY. (This does not include a city street.)	-1.160
C73	Outdoor education is synonymous with camping education.	-1.224
C31	Outdoor education is concerned ONLY with the environment in which learning takes place.	-1.290
C77	Outdoor education is concerned ONLY with what is being taught AND where it is being taught.	-1.320

TABLE 6

STATEMENTS WITH THE GREATEST DIFFERENCE BETWEEN TYPES I AND III

Number	Statement	Z-Score Difference
C63	A social studies field trip to an historical Indian village in downtown Los Angeles is outdoor education.	1.853
C67	Determining the height of a building for a mathematics class, while OUTSIDE of the formal classroom, is outdoor education.	1.562
C71	Drawing a picture of a bird for an art class, while INSIDE of the formal classroom, is outdoor education.	1.245
C45	Drawing a picture of an Indian teepee for an art class while OUTDOORS is outdoor education.	1.053
C62	Drawing a picture of a tree for an art class while in the OUTDOORS is outdoor education.	1.025
C75	Recreation education for outdoor activities such as hunting, archery, fishing, canoeing, hiking, and camping taught INDOORS is outdoor education.	-1.165
C33	Outdoor education is concerned ONLY with what is being taught.	-1.383
C42	Outdoor education is another way of saying nature interpretation.	-1.395
C77	Outdoor education is concerned ONLY with what is being taught AND where it is being taught.	-1.412
C69	Outdoor education is education conducted OUTSIDE of the formal classroom and in a wilderness or other natural area ONLY. (This does not include a city street.)	-1.848
C73	Outdoor education is synonymous with camping education.	-1.881

TABLE 7

STATEMENTS WITH THE GREATEST DIFFERENCE BETWEEN TYPES II AND III

Number	Statement	Z-Score Difference
C67	Determining the height of a building for a mathematics class, while OUTSIDE of the formal classroom, is outdoor education.	2.283
C63	A social studies field trip to an historical Indian village in downtown Los Angeles is outdoor education.	1.935
C45	Drawing a picture of an Indian teepee for an art class while OUTDOORS is outdoor education.	1.760
C62	Drawing a picture of a tree for an art class while in the OUTDOORS is outdoor education.	1.746
C47	Writing one's impressions of a jet airplane as observed in flight, while on an English class field trip, is outdoor education.	1.611
C56	Outdoor education is education conducted OUTSIDE of the formal classroom whether in a wilderness or other natural area OR on a city street.	1.301
C49	Any subject matter area taught OUTSIDE of the formal classroom involving the student directly with a MAN-MADE object is outdoor education.	1.154
C41	Determining the height of a tree in a wilderness area for a mathematics class is outdoor education.	1.102
C38	Natural science education, regardless of where it is taught, is outdoor education.	-1.017
C76	Reading a book, while INSIDE of the formal classroom, on how nature provides land cover to prevent erosion is outdoor education.	-1.047
C32	Studying caged animals for a nature study class while INDOORS is outdoor education.	-1.104

TABLE 7--Continued

Number	Statement	Z-Score Difference
C44	Any subject matter area taught INSIDE of the formal classroom involving the student directly with the NATURAL phenomenon being taught is outdoor education.	-1.216
C36	Viewing a movie on wild animal life, while INSIDE of the formal classroom, is outdoor education.	-1.288
C50	Nature study, whether taught indoors OR outdoors, is outdoor education.	-1.565
C43	Learning camping skills from a book while INDOORS is outdoor education.	-1.666
C54	Conservation education, whether taught indoors OR outdoors is outdoor education.	-1.889
C75	Recreation education for outdoor activities such as hunting, archery, fishing, canoeing, hiking, and camping taught INDOORS is outdoor education.	-1.968

TABLE 8

STATEMENTS ACCEPTED OR REJECTED BY TYPE I
MORE THAN THE OTHER TYPE

Number	Statements Accepted	Z-Score Difference*
C36	Viewing a movie on wild animal life, while INSIDE of the formal classroom, is outdoor education.	1.475
C30	A nature study class visiting a nature museum is outdoor education.	1.148
C48	Studying from a textbook, while INSIDE of the formal classroom, about the cost of building a dam to prevent land erosion is outdoor education.	1.107
C76	Reading a book, while INSIDE of the formal classroom, on how nature provides land cover to prevent erosion is outdoor education.	1.103
C37	A social studies class studying Indian artifacts, while INSIDE of the formal classroom, is outdoor education.	1.025
	Statements Rejected	
C42	Outdoor education is another way of saying nature interpretation.	-1.134
C31	Outdoor education is concerned ONLY with the environment in which learning takes place.	-1.221
C77	Outdoor education is concerned ONLY with what is being taught AND where it is being taught.	-1.292
C51	Drawing a picture of an automobile for an art class while INSIDE of the formal classroom is outdoor education.	-1.589
C69	Outdoor education is education conducted OUTSIDE of the formal classroom and in a wilderness or other natural area ONLY. (This does not include a city street.)	-1.617

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*Between Type I and the z-score average of the other types combined.

TABLE 8--Continued

Number	Statements Rejected	Z-Score Difference*
C33	Outdoor education is concerned ONLY with what is being taught.	-1.665
C73	Outdoor education is synonymous with camping education.	-1.798
C66	Outdoor education is education conducted OUTSIDE of the formal classroom and on the city street ONLY. (This does not include a wilderness or other natural area.)	-1.808

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*Between Type I and the z-score average of the other types combined.

TABLE 9

STATEMENTS ACCEPTED OR REJECTED BY TYPE II MORE THAN THE OTHER TYPES

Number	Statements Accepted	Z-Score Difference*
C46	Discovering in the OUTDOORS how nature provides land cover to prevent erosion is outdoor education.	1.461
C61	A social studies field trip into the forest to study the herbs that the Indians ate is outdoor education.	1.445
C62	Drawing a picture of a tree for an art class while in the OUTDOORS is outdoor education.	1.427
C41	Determining the height of a tree in a wilderness area for a mathematics class is outdoor education.	1.414
C45	Drawing a picture of an Indian teepee for an art class while OUTDOORS is outdoor education.	1.379
C67	Determining the height of a building for a mathematics class, while OUTSIDE of the formal classroom, is outdoor education.	1.187
C65	Learning about the structural design of a flood control dam by actually visiting a dam is outdoor education.	1.118
C63	A social studies field trip to an historical Indian village in downtown Los Angeles is outdoor education.	1.103
C47	Writing one's impressions of a jet airplane as observed in flight, while on an English class field trip, is outdoor education.	1.062
	Statements Rejected	
C43	Learning camping skills from a book while INDOORS is outdoor education.	-1.109

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*Between Type II and the z-score average of the other types combined.

TABLE 9--Continued

Number	Statements Rejected	Z-Score Difference*
C39	A social studies class studying a textbook, while INDOORS, about the herbs that the Indians ate is outdoor education.	-1.306
C32	Studying caged animals for a nature study class while INDOORS is outdoor education.	-1.361
C75	Recreation education for outdoor activities such as hunting, archery, fishing, canoeing, hiking, and camping taught INDOORS is outdoor education.	-1.394
C54	Conservation education, whether taught indoors OR outdoors is outdoor education.	-1.594

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*Between Type II and the z-score average of the other types combined.

TABLE 10

STATEMENTS ACCEPTED OR REJECTED BY TYPE III MORE THAN THE OTHER TYPES

Number	Statements Accepted	Z-Score Difference*
C75	Recreation education for outdoor activities such as hunting, archery, fishing, canoeing, hiking, and camping taught INDOORS is outdoor education.	1.230
C50	Nature study, whether taught indoors OR outdoors, is outdoor education.	1.225
C43	Learning camping skills from a book while INDOORS is outdoor education.	1.112
	Statements Rejected	
C47	Writing one's impressions of a jet airplane as observed in flight, while on an English class field trip, is outdoor education.	-1.086
C63	A social studies field trip to an historical Indian village in downtown Los Angeles is outdoor education.	-1.476
C67	Determining the height of a building for a mathematics class, while OUTSIDE of the formal classroom, is outdoor education.	-1.857

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*Between Type III and the z-score average of the other types combined.

TABLE 11

CORRELATION AMONG TYPES

	Type II	Type III	Type IV
Type I	0.592	0.617	-0.128
Type II	. .	0.482	0.088
Type III	. .	. .	0.206

TABLE 12

TYPE IV STATEMENTS AND Z-SCORES

Number	Statements Most Accepted	Z-Score
C51	Drawing a picture of an automobile for an art class while INSIDE of the formal classroom is outdoor education.	1.71
C66	Outdoor education is education conducted OUTSIDE of the formal classroom and on the city street ONLY. (This does not include a wilderness or other natural area.)	1.71
C34	Any subject matter area taught OUTSIDE of the formal classroom involving the student directly with the NATURAL phenomenon being taught is outdoor education.	1.52
C35	Learning how to pitch a tent by doing it in the OUTDOORS is outdoor education.	1.52
C52	Recreation education for archery, fishing, hunting, camping, canoeing, hiking, and for other similar outdoor activities taught OUTDOORS is outdoor education.	1.52
C68	Writing one's impressions for an English class assignment of a bird in flight, while observing the bird OUTDOORS, is outdoor education.	1.52
C54	Conservation education, whether taught indoors OR outdoors is outdoor education.	1.33
C74	A nature study course taught OUTDOORS in a wilderness area is outdoor education.	1.33
C56	Outdoor education is education conducted OUTSIDE of the formal classroom whether in a wilderness or other natural area OR on a city street.	1.24
C42	Outdoor education is another way of saying nature interpretation.	1.05
C32	Studying caged animals for a nature study class while INDOORS is outdoor education.	1.05

TABLE 12--Continued

Number	Statements Most Rejected	Z-Score
C70	Any subject matter area taught INSIDE of the formal classroom involving the student directly with a MAN-MADE object is outdoor education.	-1.02
C76	Reading a book, while INSIDE of the formal classroom, on how nature provides land cover to prevent erosion is outdoor education.	-1.02
C36	Viewing a movie on wild animal life, while INSIDE of the formal classroom, is outdoor education.	-1.21
C41	Determining the height of a tree in a wilderness area for a mathematics class is outdoor education.	-1.21
C65	Learning about the structural design of a flood control dam by actually visiting a dam is outdoor education.	-1.21
C40	Outdoor education is synonymous with school camping.	-1.21
C61	A social studies field trip into the forest to study the herbs that the Indians ate is outdoor education.	-1.68
C46	Discovering in the OUTDOORS how nature provides land cover to prevent erosion is outdoor education.	-1.88
C60	Calculating the volume of a coffee can for a mathematics class assignment, while INSIDE of the formal classroom, is outdoor education.	-1.88

CHAPTER V

SUMMARY AND CONCLUSIONS

An overview of this research project into the semantics and efinition of the term "outdoor education" is presented in this chapter. The summary aspect of this chapter includes a restatement of the problem, a review of the procedures used, and a recapitulation of the principal findings and conclusions. Also included are the implications that this study might have upon the future of the field of outdoor education and its related disciplines, upon the future use of the term outdoor education," and suggestions for further research and follow-up studies.

Restatement of the Problem

The problem was to determine whether or not there was agreement among individual members, in colleges and universities, of the American Association for Health, Physical Education, and Recreation's Council on Outdoor Education and Camping on the meaning of the term "outdoor education." Furthermore, it was within the scope of the problem to determine the nature of this agreement if areas of agreement were discovered. If areas of disagreement were discovered, it was likewise within the scope of the problem to discover the nature of this disagreement.

Summary of Procedure Used

The procedure entailed four design phases. The first concerned developing a rationale for selecting the research design. The second, third, and fourth phases involved, respectively, collecting the data for the study, analyzing the data, and briefly describing the exploratory study that prefaced this project.

The first phase concerned Q-methodology, the method selected for the study. Q-methodology, by definition, involved listing a series of statements and then having the selected population reject or accept the statements on varying degrees of semantic value. The second phases required the construction and administration of the test instrument and the tabulation of the collected data. After a thorough examination of outdoor education texts and articles and personal inquiry, four broad categories of definition of the term "outdoor education" were constructed. These categories treated such crossbreaks as the location of a particular activity, the purpose for conducting an activity, the properties of the materials or objects under observation, and the terms nearly synonymous with "outdoor education." There were 48 structured statements designed to represent various combinations of these categories. Each respondent was requested to read each statement and then respond by marking on a seven-point semantic-valued scale the extent to which he agreed or disagreed with each statement. Ninety-seven percent of the selected respondents completed and returned the rating sheet instrument.

The gathered data was factor analyzed by a computer, the third design phase of the study. In the analysis there were 107 variables (persons) and 48 observations (statements). The final analysis was coded to extract three factors or groups of attitudes toward the term "outdoor education." The program constructed a matrix of intercorrelations which was formed by correlating every person's response pattern with every other person's response pattern. The entire correlation matrix was then factor analyzed using a principal components solution with rotation to simple structure. For easy comparison, all scores were converted to z-scores. A plus or minus one standard deviation on a normalized distribution was the criterion indicating a substantial difference between types. Positive z-scores indicated the degree to which the respondents accepted the statement as pertinent to the definition of the term "outdoor education." Similarly, negative z-scores indicated the degree to which the respondents rejected the statement as part of the definition of the term "outdoor education."

The design of the final study was pre-tested and validated on an exploratory study that prefaced the collection of data for the final study. The exploratory study pre-tested the test instrument, examined Q-method applicability, and demonstrated that the nature of the problem and the data treatment lent themselves readily to a factor analytic kind of analysis and interpretation.

Principal Findings and Conclusions

The purpose of this study was to determine the similarities and differences among the attitudes toward the meaning of the term "outdoor education." "Agreement" as to the meaning of the term was defined operationally as at least 70 percent of the respondents appearing on any one of the factors abstracted during the factor analysis. The previously stated research hypothesis was that there was agreement among the members of the AAHPER Council on Outdoor Education and Camping on the meaning of the term "outdoor education." Therefore, since there was not at least 70 percent of the respondents appearing on any one factor, then the research hypothesis was rejected.

Since there were areas of disagreement, it was therefore within the scope of the problem to discover and describe the nature of this disagreement. This disagreement was described through the interpretation of extracted factors and an explanation of the concomitant attitude types.

Type I was arbitrarily called the "Environment Oriented Group." This group felt that almost anything conducted under the guise of conservation education or nature study was outdoor education, but everything else had to be taught outdoors using natural materials to be called outdoor educaiton. However, this group did not delimit "outdoors" to include only a natural or wilderness area; they accepted anywhere outside of the formal classroom as the location for an outdoor education activity, except, as described above, conservation education and nature study. This group treated "conservation education," "nature study," and "outdoor education" almost synonymously. Approximately one-third of the respondents fell into this group. In sum, the members of this group were generally media oriented, but at the same time did not want to exclude those activities related to conservation education.

Type II was arbitrarily called the "Conservation Oriented Group." This group was similar to Type I in many respects and markedly different in others. This group wanted to exclude nature study from being anything special. If nature study was not taught like other areas which they felt to be outdoor education, then nature study was not outdoor education. They did, however, desire to make an exception for conservation education activities; they wanted this to be outdoor education regardless. They would not, however, use "conservation education" and "outdoor education" synonymously, but they wanted to define them in similar ways. As in the Type I group, the Type II group comprised an additional one-third or so of the respondents population. In sum, the members of this group were generally conservation oriented and did not exclude those activities related through their purposes that might favor conservation.

Type III was arbitrarily called the "Outdoor Activity Oriented Group." This Type considered "conservation education" and "nature interpretation" as synonymous with "outdoor education." This Type accepted recreation education and physical education as outdoor education as long as the activity had something to do with the outdoors. Not even a direct experience with nature was necessary, for they accepted studying about outdoor activities as outdoor education. Recreation education outdoors and physical education outdoors seemed to be outdoor education regardless of what was observed or what the activity was, so long as it was in a wilderness or natural area. This type tended to imply that outdoor education was a place for something to happen and not part of the happening. The only contradictions were, as indicated earlier, in conservation education and nature interpretation. In sum, the members of this group were generally oriented toward the place where an activity was conducted. As in the other groups, about one-third of the respondents fell into this group.

For clarification, the three groups developed were made analogous to set relations. There was one main set and three subsets. The main set was characterized by the communalities of all three subsets whereas each subset had some distinctive characteristics of its own. The main set represented the criterion of "outdoors" and all of its varied connotations. The subsets were almost of equal size. The first subset, "Environment Oriented Group," coalesced those members of the AAHPER Council who were apparently interested in the teaching implications of outdoor education. It is logical to assume that their primary concern would most likely be in their areas of interest which were believed to be implied in the data.

The second subset, "Conservation Oriented Group," coalesced those who had partial interests in groups one and three and those interests were placed collectively into a group. These tended to be predominantly wildlife, natural science, and conservation education centered interests.

The third subset, "Outdoor Activity Oriented Group," was the most distinctive group. This group was mainly physical education and recreation education oriented and would therefore logically be most interested in the outdoor activity aspects of outdoor education.

It was this researcher's contention that within the main set of respondents, who generally believed that outdoor education had something to do with outside of the formal classroom, there were three distinct interest groups. Although they had common interests, there were a number of conflicting interests especially in relation to the notions that a group purported to emphasize. These three groups apparently had been defined according to their emphasized interests, and, although somewhat arbitrary, the interests of each group were implied in the label given to each group by the researcher.

Implications

The techniques available to the educational researcher were many; multivariate analysis, factor analysis, and computer processing are among them. However,

> educational researchers have remained egregiously ignorant of such advances . . . . Researchers in schools of education need to be apprised of the techniques which are available for social research on education.[1]

"Since 1930 approximately 200 studies have been conducted at the Master's and doctoral levels. Research dealing with the various aspects of outdoor education is by no means complete."[2]

> Research . . . has not been abundant in the area of outdoor education. The role of research in outdoor education is to bring substantiation and meaning to theory and to improve the pragmatic application of this theory through experimentation.[3]

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[1] Sam D. Sieber, "The Case of the Misconstrued Technique," Phi Delta Kappan, Vol. XLIX, No. 5 (January, 1968), p. 275.

[2] Thomas J. Rillo, "Summary of Current Trends and Research in School Camping and Outdoor Education," A paper presented at the Midwest AAHPER Convention, Cincinnati, Ohio, 1967, p. 5. (Mimeographed.)

[3] Ibid., p. 7.

"No study in the research conducted thus far has undertaken the problem of constructing a theoretical framework for the various aspects of outdoor education. This is a top priority problem!"[4] The main strength of the design of this study was its close affinity to theory. (See Chapter III.) This study was, by its very nature, theoretical and therefore lent itself readily as a base upon which to build operatively definable areas of investigation. This was the first study that attempted to clarify the various schools of thought toward the term "outdoor education." The study was aimed at leaders in the field of outdoor education and the probable elements that they used for defining the term "outdoor education."

The results of this study implied that the AAHPER Council was divided into three interest groups. Upon further examination, if these groups were in fact extant, then it would be the opinion of this researcher that at least two of these areas of interest would be similar if not identical to the purposes of other organizations within the National Education Association. If this be so, the groups would be duplicatory and therefore superfluous. This notion, of course, needs further research and confirmation.

Suggestions for Further Research

Recreation Research, in its discussion on factor analysis, states that "such a technique should be useful to recreation research that is attempting to discover new concepts and stimulate new directions of research in a given problem area."[5] Through further examination of the gathered data, the specific individuals loading highest on any particular factor may be identified, and through additional instruments probing the detailed background and experiences of these individuals, the causes for individuals of a certain genre to appear within a specific attitude type may be discovered; therefore, regressions or attitude types might reasonably be predicted from past conditions.

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[4] Donald R. Hammerman, "Research Implications in Outdoor Education," Journal of Health, Physical Education, and Recreation, Vol. XXXV, No. 3 (March, 1964), p. 89.

An immediate follow-up study might be an analysis of variance, or ANOVA, between and within the various factors produced by this study. An ANOVA would test the significance of the differences among the various types and would test the significance of the differences among the individual items within a single type.[6] An ANOVA would be the next logical step after this study and may be conducted using the data gathered for this study.

Other multivariate analytic techniques may be applied to the data used in this study. Various other relations could be examined for their significance and their usefulness in current problems. The factor analysis is one technique of multivariate analysis.

> Multivariate analysis, then, seems to offer several contributions to recreation research, especially recreation research on human behavior . . . the common facets

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[5] American Association for Health, Physical Education, and Recreation, Recreation Research (Washington, D.C.: American Association for Health, Physical Education, and Recreation, 1966), p. 187.

[6] Russell L. Ackoff, The Design of Social Research (Chicago: the University of Chicago Press, 1953), pp. 233-47.

> suggested by multivariate techniques can themselves stimulate further theorizing and research.[7]

This study can serve as an exploratory study into the underlying theoretical constructs of outdoor education. These constructs need, however, additional examination in order to produce terms and define relations that have the maximum communication power.

The study may serve as a benchmark for a longitudinal study. Using the identical instrument and methodology,[8] the AAHPER Council's attitudinal changes may easily be plotted over time. Also using the same instrument and methodology across any point in time, almost any two groups can be compared and contrasted for varying attitudes. This study provides the development and application of a "standard" against which new populations may be measured.

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[7] American Association for Health, Physical Education, and Recreation, Recreation Research, op.cit., p. 191.

[8] The test instrument and raw data may be obtained directly from B. Ray Horn, Department of Outdoor Teacher Education, Lorado Taft Field Campus, Northern Illinois University, Oregon, Illinois 61061.

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